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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/085,137

03/01/2002

Yasushi Tanaka

HYAE:134

2656

27890 7590 02/17/2009  
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EXAMINER

RAO, ANAND SHASHIKANT

ART UNIT

PAPER NUMBER

2621

MAIL DATE

DELIVERY MODE

02/17/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/085,137	<b>Applicant(s)</b> TANAKA ET AL.	
	<b>Examiner</b> Andy S. Rao	<b>Art Unit</b> 2621	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 November 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 1-4,7,8,10 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5,6,9 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

### ***Response to Request for Reconsideration***

1. Applicant's arguments filed with respect to claims 5-6, 9 and 12 on 11/12/08 have been fully considered but they are not persuasive.
2. Claims 5-6 and 9 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Honma et al., (hereinafter referred to as "Honma") in view of Chu, as was set forth in Office Action of 8/19/08.
3. Claim 12 remains rejected under 35 U.S.C. 103(a) as being unpatentable over Honma et al., (hereinafter referred to as "Honma") in view of Chu et al., (hereinafter referred to as "Chu") and further in view of Kobayashi, as was set forth in the Office Action of 8/19/08.
4. The Applicant presents three substantive arguments contending the Examiner's rejections of claims 5-6 and 9 under 35 U.S.C. 103(a) as being unpatentable over Honma et al., (hereinafter referred to as "Honma") in view of Chu, and of claim 12 under 35 U.S.C. 103(a) as being unpatentable over Honma et al., (hereinafter referred to as "Honma") in view of Chu et al., (hereinafter referred to as "Chu") and further in view of Kobayashi, as was set forth in the Office Action of 8/19/08. However, after a careful consideration of the arguments presented, and further scrutiny of the applied references, the Examiner must respectfully disagree and maintain the grounds of rejection as the currently pending claims.

After summarizing the rationale behind the pending rejection of the claims and providing Applicants interpretation of the applied references (Request for Reconsideration of 11/12/08: page 2, lines 1-12; page 3, lines 1-6), the Applicants argue that since the secondary Chu reference fails to disclose using the EOB position based control signal for both the encoding and

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quantization, but only discloses using its EOB control signal for the encoding which occurs after quantization, the "...said EOB detector for outputting the position of the non-zero quantized frequency component in the predetermined scanning order as a control signal to the quantizer and the encoder..." limitation as recited is not met (Request for Reconsideration of 11/12/08: page 2, lines 13-20; page 3, lines 7-9). The Examiner respectfully disagrees. Since Honma already discloses both the VLC and the quantization as one unit (Honma: figure 23, elements 831-832; column 23, lines 55-65), the teaching of using the Chu EOB non-zero coefficient position based control signal to control the encoder (Chu: 14, lines 40-65), when translated to the Honma teaching would be applicable to both elements of its coder (i.e. the quantizer and the Huffman coder). In particular, the Examiner notes that since Chu is concerned with implementing an advantageous zonal pattern determination (Chu: column 13, lines 60-65) by generation of an EOB non-zero coefficient position based detector (Chu: column 14, lines 55-60) for reduction in processing time (Chu: column 13, lines 53-58), one of ordinary skill in the art would note that the optimum selection of a Q-table would also benefit from the application of Chu's zonal pattern determination (Honma: column 11, lines 20-47; column 14, lines 45-55), if only to make sure that the optimal quantization table/matrix is selected for the high frequency region of a block (Honma: column 16, lines 20-35). The improvement of applying Chu's EOB non-zero coefficient position based control signal to both a quantizer and an encoder as shown in Honma, over just an encoder as shown in Chu, which is what the claims of instant invention recite represents a modification that the Courts have long held to unpatentable: the mundane duplication of parts for a multiplied effect, *St. Regis Paper Co. v. Bemis Co., Inc.*, 193 USPQ 8, 11, (7<sup>th</sup> Cir. 1977). As such, the Examiner maintains that the combination of Honma with Chu's

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EOB non-zero coefficient position based control signal, does sufficiently address the "...said EOB detector for outputting the position of the non-zero quantized frequency component in the predetermined scanning order as a control signal to the quantizer and the encoder..." limitation as in the claim.

Secondly, the Applicants assert that the rejection of record is improper because "...there is no disclosure or teaching in any of these references, and no sound basis stated in this record, that would have suggested the desirability of combining any portions thereof effectively to anticipate or render obvious applicants' claimed invention..." (Request for Reconsideration of 11/17/08: page 3, lines 10-15). The Examiner staunchly disagrees on multiple counts. First, the Applicants' insistence of the motivation coming from the hermetically sealed world of the references as a basis of establishing the propriety of the rejection is in error. The Examiner notes that the Courts concur with the Examiner's position: allowing for one of ordinary skill in the art to start with the references as a template but incorporate the depth of knowledge of the practitioner of art in establishing sufficient TSM (teaching, suggestion, motivation) criteria, KSR International Co. v. Teleflex, Inc., 550 U.S.-, 82 USPQ2d 1385 (2007). Additionally, the Examiner notes that a motivation coming from the Chu reference was used in the pending rejection (Office Action of 11/12/08: page 3, lines 13-16: reduction of processing time in coding the coefficients), and it is unclear to this Examiner how this provided motivation can be baldly asserted by the Applicants as not being a "sound" reason nor one of record without out any supporting arguments to substantiate such an untenable position. Additionally, the Examiner notes that as discussed above, there is sufficient case law that further augments the Examiner's

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rationale residing at the foundation of this rejection. Accordingly, the Examiner maintains that the proper motivation has been provided as the basis of this rejection.

Lastly, the Applicant's argue that tertiary Kobayashi reference fails to address the "...said EOB detector for outputting the position of the non-zero quantized frequency component in the predetermined scanning order as a control signal to the quantizer and the encoder..." limitation (Request for Reconsideration of 11/17/08: page 3, lines 16-20) as in the claim. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In particular, the Examiner notes that Kobayashi doesn't have to address the "...said EOB detector for outputting the position of the non-zero quantized frequency component in the predetermined scanning order as a control signal to the quantizer and the encoder..." limitation on its own, but addresses the feature by its combination with the Honma-Chu combination which does address the limitation as discussed above.

Detailed rejections follow below.

### ***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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6. Claim 9 is rejected under 35 U.S.C. 101 as not falling within one of four statutory categories of inventions. Supreme Court precedent and recent Federal Circuit decisions indicate a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example there is no apparatus mentioned either in the preamble nor in the subsequent limitations for executing the method, nor is the generation of an EOB control signal for encoding considered “...transforming...” of the signal, *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5-6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honma et al., (hereinafter referred to as “Honma”) in view of Chu.

Honma discloses an encoding circuit that includes a frequency converter for frequency-converting data of a processing target block into frequency components, a quantizer for quantizing the frequency components, and an encoder for variable length coding the quantized

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frequency components in a predetermined scanning order (Honma: figure 17A); and end of block detector for detecting the end of an encoded block (Honma: column 21, lines 35-60), wherein said EOB detector outputs a control signal (Honma: figure 19; column 23, lines 30-45; column 24, lines 5-20), wherein said quantizer is for quantizing the frequency components (Honma: column 21, lines 20-25) as indicated by the control signal (Honma: column 18, lines 40-60), and pausing the quantizing thereafter (Honma: column 24, lines 60-67; column 25, lines 1-20); and said encoder for variable length coding the quantized frequency components as indicated by the control signal, adding an end of block code that indicates an end of effective components, and pauses the variable length coding thereafter (Honma: column 21, lines 60-67; column 22, lines 1-32), as in claim 5. However, Honma fails to explicitly disclose that the EOB detector outputs the position of the non-zero frequency component in a predetermined scanning order as a control signal for an encoder, as in the claim. Chu discloses a video compression system utilizing a vector adaptive transform that generates the position of the last non-zero frequency component in a predetermined scanning order (Chu: column 13, lines 35-50) and subsequent insertion of an EOB signal (Chu: column 14, lines 45-65) as a control signal for reducing the processing time in processing frequency coefficients (Chu: column 13, lines 50-60). Accordingly, given this teaching it would have obvious for one of ordinary skill in the art at the time of the invention to incorporate the Chu teaching of generating the position of the last non-zero frequency component in a predetermined scanning order and subsequent insertion of an EOB signal into the Honma apparatus in order to reduce the processing time of the coding execution in the Honma apparatus. The Honma apparatus, now incorporating the Chu disclosure of generating a signal

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indicating the position of the last non-zero frequency component in a predetermined scanning order and subsequent insertion of an EOB signal, has all of features of claim 5.

Regarding claim 6, the Honma apparatus, now incorporating the Chu disclosure of generating a signal indicating the position of the last non-zero frequency component in a predetermined scanning order and subsequent insertion of an EOB signal, has wherein the end of block detector is between the frequency converter and the quantizer, and said end of block detector comprises: a memory for temporarily retaining the frequency components of the processing target block from the frequency converter, and outputting the retained frequency components in the predetermined scanning order (Chu: column 45-60); a counter for detecting a position of the frequency component that is inputted from the memory in the predetermined scanning order (Honma: column 24, lines 1-20); a first comparator for comparing the frequency component, using a quantization value as a divisor for dividing the frequency component in the quantizer (Honma: column 23, lines 15-25); and a register for retaining a position of a non-zero quantized frequency component in the predetermined scanning order based on a result of the first comparator (Chu: column 15, lines 50-67), as in the claim.

Honma discloses an encoding method (Honma: figure 16) comprising: frequency-converting data of a processing target block into frequency components (Honma: column 21, lines 20-25); detecting an end of block of the frequency components by comparing the frequency component with a quantization value as a divisor for dividing the frequency components in a quantization process (Honma: column 21, lines 35-45), and detecting the end of an encoded block (Honma: column 21, lines 46-60); quantizing the frequency components (Honma: column 18, lines 40-60), and pausing the quantizing thereafter (Honma: column 24, lines 60-67; column

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25, lines 60-67); variable length coding the quantized frequency components (Honma: column 24, lines 5-19), adding an end of block code that indicates an end of effective components (Honma: column 24, lines 20-30), and pausing the variable length coding thereafter (Honma: column 24, lines 60-67; column 25, lines 1-20), as in claim 9. However, Honma fails to explicitly disclose that the EOB detector outputs the position of the non-zero frequency component in a predetermined scanning order as a control signal as in the claim. Chu discloses a video compression method (Chu: column 17, lines 60-67; column 18, lines 1-18) utilizing a vector adaptive transform that generates the position of the last non-zero frequency component in a predetermined scanning order (Chu: column 13, lines 35-50) and subsequent insertion of an EOB signal (Chu: column 14, lines 45-65) as a control signal for reducing the processing time in processing frequency coefficients (Chu: column 13, lines 50-60). Accordingly, given this teaching it would have obvious for one of ordinary skill in the art at the time of the invention to incorporate the Chu teaching of generating the position of the last non-zero frequency component in a predetermined scanning order and subsequent insertion of an EOB signal into the Honma method in order to reduce the processing time of the coding execution in the Honma apparatus. The Honma method, now incorporating the Chu disclosure of generating a signal indicating the position of the last non-zero frequency component in a predetermined scanning order and subsequent insertion of an EOB signal, has all of features of claim 9.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honma et al., (hereinafter referred to as “Honma”) in view of Chu et al., (hereinafter referred to as “Chu”) and further in view of Kobayashi.

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Honma discloses an encoding method (Honma: figure 16) comprising: frequency-converting data of a processing target block into frequency components (Honma: column 21, lines 20-25); detecting an end of block of the frequency components by comparing the frequency component with a quantization value as a divisor for dividing the frequency components in a quantization process (Honma: column 21, lines 35-45), and detecting the end of an encoded block (Honma: column 21, lines 46-60); quantizing the frequency components (Honma: column 18, lines 40-60), and pausing the quantizing thereafter (Honma: column 24, lines 60-67; column 25, lines 60-67); variable length coding the quantized frequency components (Honma: column 24, lines 5-19), adding an end of block code that indicates an end of effective components (Honma: column 24, lines 20-30), and pausing the variable length coding thereafter (Honma: column 24, lines 60-67; column 25, lines 1-20), as in claim 12. However, Honma fails to explicitly disclose that the EOB detector outputs the position of the non-zero frequency component in a predetermined scanning order as a control signal or the implementation of the method as a computer program *on a computer readable medium* for making a computer implement the method as in the claim. Chu discloses a video compression method (Chu: column 17, lines 60-67; column 18, lines 1-18) utilizing a vector adaptive transform that generates the position of the last non-zero frequency component in a predetermined scanning order (Chu: column 13, lines 35-50) and subsequent insertion of an EOB signal (Chu: column 14, lines 45-65) as a control signal for reducing the processing time in processing frequency coefficients (Chu: column 13, lines 50-60). Accordingly, given this teaching it would have obvious for one of ordinary skill in the art at the time of the invention to incorporate the Chu teaching of generating the position of the last non-zero frequency component in a predetermined scanning order and

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subsequent insertion of an EOB signal into the Honma method in order to reduce the processing time of the coding execution in the Honma apparatus. The Honma method, now incorporating the Chu disclosure of generating a signal indicating the position of the last non-zero frequency component in a predetermined scanning order and subsequent insertion of an EOB signal, has a majority of features of claim 12, but still fails to disclose the implementation of the method as a computer program *on a computer readable medium* for making a computer implement the method as in the claim. Kobayashi discloses an image encoding method (Kobayashi: figures 1-6) including end of block detection/processing (Kobayashi: column 12, lines 35-50) as implemented on as a computer program on a computer readable medium (Kobayashi: column 24, lines 35-45) in order to have the method implemented across a distributed network (Kobayashi: column 26, lines 50-52). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the Kobayashi teaching of having a computer program as embodied as instructions on a computer readable medium with the Honma-Chu method in order to have the Honma-Chu method implemented across distributed networks. The Honma method, now incorporating the Chu disclosure of generating a signal indicating the position of the last non-zero frequency component in a predetermined scanning order and subsequent insertion of an EOB signal and implemented as a computer program on a computer readable medium as shown by Kobayashi, has all of the features of claim 12.

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***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (571)-272-7337. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571)-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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February 11, 2009.

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